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H. R. 11565

[Report No. 93-654]

IN THE SENATE OF THE UNITED STATES

DECEMBER 4, 1973
Read twice and referred to the Committee on Public Works

DECEMBER 19, 1973
Reported by Mr. RANDOLPH, with amendments

[Insert the part printed in italic]

AN ACT

To insure that certain buildings financed with Federal funds utilize the best practicable technology for the conservation and use of energy.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That as used in *sections 2 through 5 of* this Act, the term—

(1) "new building" means any building (other than a privately owned residential structure) (A) which is to be constructed or altered by or on behalf of the United States, or (B) more than 66 per centum of the net assignable area of which is to be leased by the United States after the date of enactment of this

Act after construction or alteration in accordance with plans or specifications of the United States.

(2) "existing building" means any building (other than a privately owned residential structure) which is owned by the United States or which is leased by the United States and more than 66 per centum of the net assignable area of which is used on or after the date of enactment of this Act by or on behalf of the United States.

SEC. 2. The Administrator of General Services shall develop design criteria for new buildings providing the best practicable use and conservation of energy. Such criteria upon development shall be incorporated into plans or specifications for new buildings to be under his custody or control. In developing design criteria, the Administrator of General Services shall consider, but not be limited to: (A) architectural features and site orientation that will make the most efficient use of sunlight and other natural phenomena, (B) insulation and elimination of excessive fenestration, (C) energy expended in the manufacture and transportation of building materials, and (D) new techniques for energy supply, generation, and transmission.

SEC. 3. The Administrator of General Services shall inventory and examine existing buildings under his custody to determine which improvements can be made

to insure that these buildings will utilize the best practicable technology for the conservation and use of energy.

SEC. 4. (a) The Administrator of General Services shall report to the Congress the results of his survey inventory under section 3 no later than January 1, 1975.

(b) The Administrator of General Services shall report to Congress, not later than January 1, 1975, and from time to time thereafter, on his activities in carrying out section 2 of this Act.

SEC. 5. There is authorized to be appropriated to carry out section 2 not to exceed $500,000, to carry out section 3, not to exceed $5,000,000, and to carry out section 4, not to exceed $500,000.

SEC. 6. (a)(1) The Congress hereby finds—

(A) that federally owned and federally assisted facilities have a significant impact on the Nation's consumption of energy;

(B) that energy conservation practices adopted for the design, construction, and utilization of these facilities will have a beneficial effect on the Nation's overall supply of energy;

(C) that the cost of the energy consumed by these facilities over the life of the facilities must be considered, in addition to the initial cost of constructing such facilities; and

(D) that the cost of energy is significant and facility designs must be based on the lowest total life cycle cost, including (i) the initial construction cost, and (ii) the cost, over the economic life of the facility, of the energy consumed, and of operation and maintenance of the facility as it affects energy consumption.

(2) The Congress declares that it is the policy of the United States to insure that energy conservation practices are employed in the design of Federal and federally assisted facilities. To this end the Congress encourages Federal agencies to analyze the cost of the energy consumption of each facility constructed or each major facility constructed or renovated, over its economic life, in addition to the initial construction for renovation cost.

(b) For purposes of this section:

(1) The term "Federal agency" means an executive agency (as defined in section 105 of title 5, United States Code) and includes the United States Postal Service.

(2) The term "facility" means any building on which construction is initiated six months or more after the date of enactment of this Act.

(3) The term "major facility" means any building of fifty thousand or more square feet of usable floor

space on which construction or renovation is initiated six months or more after the date of enactment of this Act.

(4) The term "Federal facility" or "major Federal facility" means a facility constructed, or a major facility constructed or renovated, by a Federal agency.

(5) The term "federally assisted facility" or "major federally assisted facility" means a facility constructed, or major facility constructed or renovated, in whole or in part with Federal funds or with funds guaranteed or insured by a Federal agency.

(6) The term "initial cost" means the required cost necessary to construct a facility or construct or renovate a major facility.

(7) The term "economic life" means the projected or anticipated useful life of a facility.

(8) The term "life-cycle cost" means the cost of a facility including (i) its initial cost, and (ii) the cost, over the economic life of the facility, of the energy consumed and of operation and maintenance of the facility as it affects energy consumption.

(9) The term "energy consumption analysis" means the evaluation of all energy consuming systems and components by demand and type of energy, including the internal energy load imposed on a facility by its occu-

pants, equipment and components, and the external energy load imposed on the facility by climatic conditions.

(c)(1) The Congress authorizes and directs that Federal agencies shall carry out the construction of Federal facilities and the construction and renovation of major Federal facilities under their jurisdiction or programs for the construction of federally assisted facilities and the construction and renovation of major federally assisted facilities in such a manner as to further the policy declared in paragraph (a)(2) of this section, insuring that energy conservation practices are employed in new Federal and federally assisted facilities and in new or renovated major Federal and federally assisted facilities.

(2) Each Federal agency having jurisdiction over any Federal or federally assisted facilities construction program shall require the preparation of a complete life-cycle cost analysis for each major facility (exceeding fifty thousand square feet of usable floor space), for the expected life of the major facility.

(3) This life-cycle cost analysis shall include but not be limited to such elements as:

(A) the coordination and positioning of the major facility on its physical site;

(B) the amount and type of fenestration employed in the major facility;

(C) the amount of insulation incorporated into the facility design;

(D) the variable occupancy and operating conditions of the major facility, including illumination levels; and

(E) an energy consumption analysis of the major facility's heating, ventilating, and air-conditioning system, lighting system, and all other energy-consuming systems. The energy consumption analysis of the operation of energy-consuming systems in the major facility should include but not be limited to:

(i) the comparison of two or more system alternatives;

(ii) the simulation of each system over the entire range of operation of the major facility for a year's operating period; and

(iii) the evaluation of the energy consumption of component equipment in each system considering the operation of such components at other than full or rated outputs.

(4) The life-style cost analysis performed for each

major facility shall provide but not be limited to the following information:

(A) the initial cost of each energy-consuming system being compared and evaluated;

(B) the annual cost of all utilities ;

(C) the annual cost of maintaining each energy-consuming system; and

(D) the average replacement cost for each system expressed in annual terms for the economic life of the major facility.

(5) Selection of the optimum system or combination of systems to be incorporated into the design of the major facility shall be based on the life-cycle cost analysis of the economic life of the major facility.

(6) In the selection of locations for new Federal and federally assisted facilities consideration shall be given to proximity to existing or planned mass transit facilities.

(d) The life-cycle cost analysis and consideration of energy conservation practices required by subsection (c) of this section shall be included by the Administrator of the General Services Administration in any prospectus submitted to the Committees on Public Works of the Senate and the House of Representatives under section 7 of the Public Buildings Act of 1959, as amended.

(e) The Administrator of the General Services Ad-

ministration shall prepare and submit biennial reports to the President and the Congress on the results of its program established pursuant to subsections (c) and (d) of this section. Such report shall include a description of equipment, methods of construction, and operating practices used to achieve energy conservation, including comparisons of energy consumption and costs for facilities in which such equipment, methods, or policies are and are not used.

(f) The Administrator of the General Services Administration is authorized and directed to develop, publish, and implement energy conservation guidelines for all Federal procurement, except that the United States Postal Service shall have the responsibility to develop, publish, and implement energy conservation guidelines for all postal procurement. These guidelines shall be designed to assure that efficient energy use becomes a major consideration in all Federal procurement and shall be followed by all Federal agencies.

(g) The provisions of subsection (c) and subsection (f) of this section shall apply to all the construction and procurement policies of the Department of Defense, except where the Secretary of Defense finds that combat needs require otherwise.

Passed the House of Representatives December 3, 1973.

Attest: W. PAT JENNINGS,

Clerk.